

MV2A Thermocouple Vacuum Controller

Part Number: **2-7900-07X**



Operating Specifications

Operating Range	1*10 ⁻³ Torr to 20 Torr
Communications	None
Analog Output	0 to 5 V DC
Analog Output Resolution	12 bits
Programmable Set Points	2
Set Point Type	Relay
Supply Voltage	110/220 V AC, 50-60 Hz
Maximum Power	8 W
Calibration Medium	Dry air or nitrogen
Operating Temperature	0 °C to 50 °C
Storage Temperature	-20 °C to 60 °C
Display Readable Distance	3 m (10 ft)
Maximum Sensors Controlled	1
Maximum Sensors Displayed	1
Response Time	≤2 ms
Accuracy	
1 mTorr to 10 mTorr	±1 mTorr
10 mTorr to 100 mTorr	±10% of reading
100 mTorr to 1 Torr	±20% of reading

Physical Characteristics

Housing	Aluminum
Electrical Connections	D-Sub 15-pin male
Weight with Sensor (typical)	517 g (1.14 lbs)
Weight without Sensor	320 g (0.70 lbs)

Key Features and Benefits

- Competitively priced
- Very compact design
- Analog 0 to 5 V DC output
- Excellent customer service and support
- Rapid turn-around for calibration and service

Applications and Industries

- E-beam welding
- Freeze dryers
- Liquefied Natural Gas (LNG), industrial gas, cryogenics
- National labs, research and development
- Vacuum distillation
- Vacuum glove boxes

Materials Exposed to Vacuum

Please refer to the appropriate sensor datasheet for materials exposed to vacuum. Datasheets are available to download on our website at frederickscompany.com/resources/.

Certifications, Compliance, and Ratings

- IP40
- ISO 17025 accredited calibration optional
- NIST traceable calibration optional

Description

The **MV2A** is a thermocouple vacuum sensor controller with a range of 1*10⁻³ Torr to 20 Torr. It can utilize the Televac® **2A thermocouple**, **2A VacuMini**, and **2A NASA Mini** vacuum gauge.

It has a red, three-digit, seven segment LED display that displays pressure in units of mTorr and Torr. The MV2A has 2 set points relays, and a 0 V DC to 5 V DC analog output.

Ordering Information

Part Number	Description
2-7900-071	MV2A 110 V AC
2-7900-072	MV2A 220 V AC

Cables and Accessories

Part Number	Description
2-9800-077	10' 2A cable
2-9800-078	20' 2A cable
2-9800-079	35' 2A cable
2-9800-080	50' 2A cable
2-9800-081	10' 2A coiled cable
2-9800-096	10' 2A Mini cable
2-9800-082	10' 2A Mini coiled cable
6-8500-001	Mounting clips
6-8500-002	Red lens
6-8500-003	Bezel

Compatible Vacuum Gauges

Part Number	Description
2-2100-10	2A 1/8" NPT Nickel-plated Brass
2-2100-016	2A NW16/KF16 Nickel-plated Brass
2-2100-025	2A NW25/KF25 Nickel-plated Brass
2-2126-001	2A 1/8" NPT Stainless Steel
2-2126-030	2A NW16/KF16 Stainless Steel
2-2126-031	2A NW25/KF25 Stainless Steel
2-2126-040	2A 8-VCO Male Stainless Steel
2-2126-041	2A 8-VCO Female Stainless Steel
2-2126-042	2A 8-VCR Male Stainless Steel
2-2126-043	2A 8-VCR Female Stainless Steel
2-2126-044	2A 4-VCR Male Stainless Steel
2-2126-045	2A 4-VCR Female Stainless Steel
2-2126-050	2A 1.33" CF Stainless Steel
2-2126-052	2A 2.75" CF Stainless Steel
2-2100-102	2A VacuMini 1/8" NPT Stainless Steel
2-2100-31	2A NASA Mini 1/8" NPT Stainless Steel
2-2100-97	2A NASA Mini VCR 4 male Stainless Steel

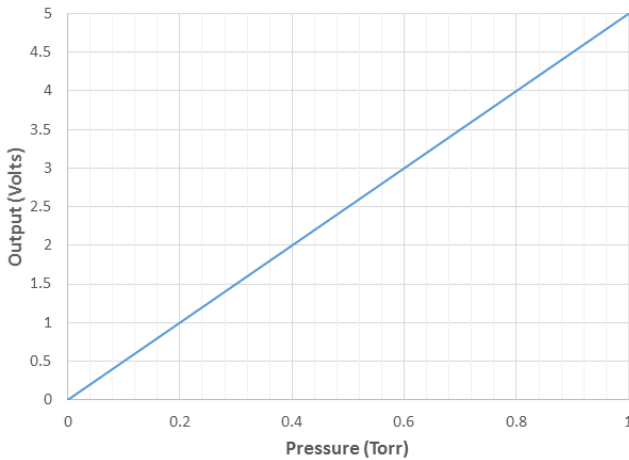
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Analog Output Behavior

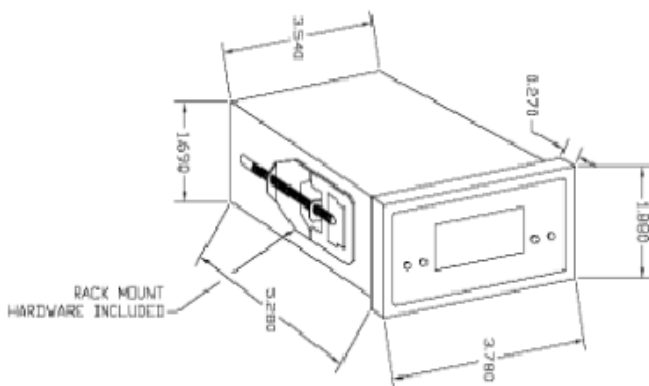


Electrical Connections



Label	Description	Label	Description
1	AC Input	7	SP2 NO
2	SP1 C	8	Analog Out + (0 to 5) V
3	SP1 NC	9	Analog Out - (0 to 5) V
4	SP1 NO	10	Earth Ground
5	SP2 C	11	Sensor Input
6	SP2 NC		

Dimensional Drawing



Additional Documentation

Manual	MV2A Thermocouple Instruction Manual
AN3010	Torr Scientific/Torr Decimal/mTorr/Micron Conversions
AN3015	Recommended Practices for Vacuum Calibration
AN3020	Vacuum Terminology Reference
Resource	Televac® Tolerances

Company Information

Specialty manufacturing services that promise precision -

Since 1935, Fredericks has specialized exclusively in tilt and vacuum measurement products. Today, our precise manufacturing processes produce the most accurate and advanced products on the market, ensuring perfection every time. A true specialty service provider, we are willing and eager to put our experience and capabilities to good use, helping OEMs achieve even the most complex designs.

High performance products designed and manufactured with pride -

Fredericks is a global provider and U.S. manufacturer and designer of high-performance tilt and vacuum measurement products. Built to last, our products are made with state-of-the-art sensing technology, proven processes, and an intrinsic passion for the trade. Offering simple integration and quality and safety benchmarks, our customers benefit not just from standard-setting reliability, but from our commitment to competitive pricing and performance.

A partnership that prioritizes uptime, lead time, and service -

Fredericks guarantees customer satisfaction and our 'not too big, not too small' operation is what enables us to offer a true partnership experience. Our dedicated representatives and engineers offer exceptionally responsive service and some of the fastest lead times in the industry, knowing that uptime is the key to your success. With anytime-access to our leadership team and solutions that enhance your products, you will feel the Fredericks difference.

Vacuum measurement tools built for the toughest jobs -

Fredericks' world-class vacuum sensors, gauges, and control instrumentation are engineered for the most demanding applications and environments. Our patented Televac® and ETI vacuum brands feature cold-cathode technology, thermocouple and convection gauges, and precision-manufactured hot ionization gauges. Dedicated solely to vacuum gauging and calibration services, we provide industrial heating, national laboratories, cryogenics, and industrial gas applications, among many others, with fast lead times and industry-leading performance. Covering the entire practical vacuum range, our products deliver rapid response vacuum readings and sensitivity.

Contact Us

The Fredericks Company
 2400 Philmont Avenue
 Huntingdon Valley, PA 19006
 tel: +1 215 947 2500
 fax: +1 215 947 7464
 email: sales@frederickscompany.com
 web: www.frederickscompany.com

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